

LNPTM THERMOCOMPTM COMPOUND Z1C00

DESCRIPTION

THERMOCOMP Z1C00 is an injection moldable compounds with ultra-low dielectric constant under wide frequencies, with other features including dimension stability, high HDT and low water uptake. Target industries are electronics and electrical including 5G applications.

GENERAL INFORMATION	
Features	Heat Stabilized, High Flow, Low Warpage, Non halogenated flame retardant, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Water Management
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Material Handling, Textile

TYPICAL PROPERTY VALUES

Revision 20241016

MECHANICAL ⁽¹⁾ Tensile Stress, yld, Type I, 50 mm/min69MPaASTM D638Tensile Stress, brk, Type I, 50 mm/min54MPaASTM D638Tensile Strain, yld, Type I, 50 mm/min5.2%ASTM D638Tensile Strain, brk, Type I, 50 mm/min32%ASTM D638Tensile Modulus, 50 mm/min2350MPaASTM D638Flexural Andulus, 2.6 mm/min, 100 mm span102MPaASTM D790Flexural Modulus, 2.6 mm/min, 100 mm span2250MPaASTM D790Tensile Stress, yled, 50 mm/min64MPaSto 527Tensile Stress, yled, 50 mm/min70MPaSto 527Tensile Stress, yled, 50 mm/min5.1%Sto 527Tensile Stress, yled, 50 mm/min5.1%Sto 527Tensile Modulus, 1 mm/min2300MPaIS0 527Tensile Modulus, 2 mm/min06MPaIS0 527Tensile Modulus, 1 mm/min2300MPaIS0 527Tensile Modulus, 2 mm/min106MPaIS0 178Flexural Modulus, 2 mm/min2370MPaIS0 178Tensile Modulus, 2 mm/min106MPaIS0 178Flexural Modulus, 2 mm/min102J/mASTM D256Ico Impact, notched, 23°C80J/mIS0 180/IAIco Impact, notched, 30°C80J/mASTM D256Ico Impact, notched 80°10°4 + 23°C12Iso 180/IAIso 180/IAIco Impact, notched 80°10°4 + 23°C8Iso 180/IAIso 180/IAIco Impact, no	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Tensile Stress, brk, Type I, 50 mn/min54MPaASTM D638Tensile Strain, yld, Type I, 50 mn/min5.2%ASTM D638Tensile Strain, brk, Type I, 50 mn/min32%ASTM D638Tensile Stress, yld, 2.6 mn/min, 100 mm span2350MPaASTM D638Flexural Modulus, 2.6 mn/min, 100 mm span02MPaASTM D790Tensile Stress, yld, 50 mn/min64MPaS0 527Tensile Stress, yleid, 50 mn/min70MPaS0 527Tensile Stress, yleid, 50 mn/min5.1%S0 527Tensile Stress, yleid, 50 mn/min7.1%S0 527Tensile Stress, yleid, 2 mn/min2390MPaIS0 527Tensile Modulus, 2 mn/min2300MPaIS0 527Tensile Modulus, 2 mn/min2300MPaIS0 178Tensile Modulus, 2 mn/min210MPaIS0 180Izod Impact, notched, 33°C100J/mASTM D256Izod Impact, notched, 30°C8I/m2IS0 180/1AIzod Impact, notched 80°10°14°423°C8I/m2IS0 180/1A<	MECHANICAL ⁽¹⁾			
Tensile Strain, yid, Type I, 50 mm/min5.2%ASTM D638Tensile Strain, brk, Type I, 50 mm/min32%ASTM D638Tensile Modulus, 50 mm/min2350MPaASTM D638Flexural Stress, yid, 2.6 mm/min, 100 mm span102MPaASTM D790Flexural Modulus, 2.6 mm/min, 100 mm span2250MPaASTM D790Tensile Stress, break, 50 mm/min64MPaIso 527Tensile Stress, yield, 50 mm/min5.1%Iso 527Tensile Stress, yield, 50 mm/min5.1%Iso 527Tensile Strain, yield, 50 mm/min7.1%Iso 527Tensile Strain, break, 50 mm/min2390MPaIso 527Tensile Strain, break, 50 mm/min2390MPaIso 527Tensile Modulus, 2 mm/min2370MPaIso 527Tensile Modulus, 2 mm/min2300MPaIso 527Tensile Modulus, 2 mm/min2300MPaIso 527Tensile Modulus, 2 mm/min2300MPaIso 178Flexural Modulus, 2 mm/min2300MPaIso 178Tensile Modulus, 2 mm/min2300MPaIso 178Tensile Modulus, 2 mm/min210J/mASTM D256Ito du Impact, notched, 30°C80J/mIso 180/14Ito du Impact, notched 80°10°4 +23°C12Iso 180Ito du Impact, notched 80°10°4 +33°C8So 180/14Ito du Impact, notched 80°10°4 -30°C8So 180/14Ito du Impact, notched 80°10°4 -30°C8So 180/14 <td>Tensile Stress, yld, Type I, 50 mm/min</td> <td>69</td> <td>MPa</td> <td>ASTM D638</td>	Tensile Stress, yld, Type I, 50 mm/min	69	MPa	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min32%ASTM D638Tensile Modulus, 50 mm/min2350MPaASTM D638Flexural Stress, yld, 2.6 mm/min, 100 mm span102MPaASTM D790Flexural Modulus, 2.6 mm/min, 100 mm span2250MPaASTM D790Tensile Stress, break, 50 mm/min64MPaISO 527Tensile Stress, yield, 50 mm/min70MPaISO 527Tensile Strein, yield, 50 mm/min5.1%ISO 527Tensile Strein, break, 50 mm/min7.1%ISO 527Tensile Stress, yield, 2 mm/min106MPaISO 527Tensile Stress, yield, 2 mm/min2390MPaISO 527Tensile Modulus, 2 mm/min106MPaISO 1807Flexural Modulus, 2 mm/min106MPaISO 187Itematic Stress, yield, 2 mm/min120MPaISO 1807Itematic Stress, yield, 2 mm/min120MPaSto 178Itematic Stress, yield, 2 mm/min120MPaSto 178Itematic Stress, yield, 2 mm/min120J/mASTM D256Itematic Stress, yield, 3 mm/min120J/mSto 1807Itematic Stress, Yield, 3 mm/mi	Tensile Stress, brk, Type I, 50 mm/min	54	MPa	ASTM D638
Tensile Modulus, 50 mm/min2350MPaASTM D638Flexural Stress, yld, 2.6 mm/min, 100 mm span102MPaASTM D790Flexural Modulus, 2.6 mm/min, 100 mm span2250MPaASTM D790Tensile Stress, break, 50 mm/min64MPaISO 527Tensile Stress, yield, 50 mm/min70MPaISO 527Tensile Strain, yield, 50 mm/min5.1%ISO 527Tensile Strain, break, 50 mm/min7.1%ISO 527Tensile Strain, break, 50 mm/min2390MPaISO 527Flexural Modulus, 2 mm/min106MPaISO 178Flexural Modulus, 2 mm/min2370MPaISO 178IMPACT ⁽¹⁾ 12J/mASTM D256Izod Impact, notched, 23°C120J/mASTM D256Izod Impact, notched 80°10°4 +23°C12KJ m²ISO 180/1AIzod Impact, notched 80°10°4 +23°C8KJ m²ISO 180/1A	Tensile Strain, yld, Type I, 50 mm/min	5.2	%	ASTM D638
Flexural Stress, yid, 2.6 mm/min, 100 mm span102MPaASTM D790Flexural Modulus, 2.6 mm/min, 100 mm span2250MPaASTM D790Tensile Stress, break, 50 mm/min64MPaISO 527Tensile Stress, yield, 50 mm/min70MPaISO 527Tensile Strain, yield, 50 mm/min5.1%ISO 527Tensile Strain, break, 50 mm/min7.1%ISO 527Tensile Modulus, 1 mm/min2390MPaISO 527Flexural Modulus, 2 mm/min06MPaISO 527Flexural Modulus, 2 mm/min2370MPaISO 178Flexural Modulus, 2 mm/min106MPaISO 178Flexural Modulus, 2 mm/min2370MPaISO 178Flexural Modulus, 2 mm/min106MPaISO 178Flexural Modulus, 2 mm/min102J/mASTM D256Izod Impact, notched, 23°C120J/mASTM D256Izod Impact, notched, 30°C80J/mISO 180/1AIzod Impact, notched 80°10°4+23°C88Iso 180/1A	Tensile Strain, brk, Type I, 50 mm/min	32	%	ASTM D638
Flexural Modulus, 2.6 mm/min, 100 mm span2250MPaASTM D790Tensile Stress, break, 50 mm/min64MPaISO 527Tensile Stress, yield, 50 mm/min70MPaISO 527Tensile Strain, yield, 50 mm/min5.1%ISO 527Tensile Strain, break, 50 mm/min7.1%ISO 527Tensile Modulus, 1 mm/min2390MPaISO 527Flexural Stress, yield, 2 mm/min2390MPaISO 178Flexural Modulus, 2 mm/min2370MPaISO 178ItopAct ⁽¹⁾ ItopAct 100J/mASTM D256Izod Impact, notched, 23°C120J/mASTM D256Izod Impact, notched 80°10°4 +23°C8KJ/m²ISO 180/1A	Tensile Modulus, 50 mm/min	2350	MPa	ASTM D638
Tensile Stress, break, 50 mm/min 64 MPa ISO 527 Tensile Stress, yield, 50 mm/min 70 MPa ISO 527 Tensile Strain, yield, 50 mm/min 5.1 % ISO 527 Tensile Strain, break, 50 mm/min 7.1 % ISO 527 Tensile Modulus, 1 mm/min 2390 MPa ISO 527 Flexural Stress, yield, 2 mm/min 106 MPa ISO 178 Flexural Modulus, 2 mm/min 2370 MPa ISO 178 IMPACT ⁽¹⁾ 120 J/m ASTM D256 Izod Impact, notched, 23°C 80 J/m ASTM D256 Izod Impact, notched 80°10°4 +23°C 12 kJ/m² ISO 180/1A	Flexural Stress, yld, 2.6 mm/min, 100 mm span	102	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min70MPaISO 527Tensile Strain, yield, 50 mm/min5.1%ISO 527Tensile Strain, break, 50 mm/min7.1%ISO 527Tensile Modulus, 1 mm/min2390MPaISO 527Flexural Stress, yield, 2 mm/min106MPaISO 178Flexural Modulus, 2 mm/min2370MPaISO 178IMPACT ⁽¹⁾ 120J/mASTM D256Izod Impact, notched, 23°C80J/mSO 180/1AIzod Impact, notched 80°10°4 +23°C8Kl/m²ISO 180/1A	Flexural Modulus, 2.6 mm/min, 100 mm span	2250	MPa	ASTM D790
Tensile Strain, yield, 50 mm/min5.1%ISO 527Tensile Strain, break, 50 mm/min7.1%ISO 527Tensile Modulus, 1 mm/min2390MPaISO 527Flexural Stress, yield, 2 mm/min106MPaISO 178Flexural Modulus, 2 mm/min2370MPaISO 178IMPACT ⁽¹⁾ 120J/mASTM D256Izod Impact, notched, 23°C80J/mASTM D256Izod Impact, notched 80°10°4 +23°C8KJ/m²ISO 180/1A	Tensile Stress, break, 50 mm/min	64	MPa	ISO 527
Tensile Strain, break, 50 mm/min7.1%ISO 527Tensile Modulus, 1 mm/min2390MPaISO 527Flexural Stress, yield, 2 mm/min106MPaISO 178Flexural Modulus, 2 mm/min2370MPaISO 178ImpAct ⁽¹⁾ 100100100MPaIzod Impact, notched, 23°C120J/mASTM D256Izod Impact, notched, 30°C80J/mISO 180/1AIzod Impact, notched 80°10°4 +23°C8KJ/m²ISO 180/1A	Tensile Stress, yield, 50 mm/min	70	MPa	ISO 527
Tensile Modulus, 1 mm/min 2390 MPa ISO 527 Flexural Stress, yield, 2 mm/min 106 MPa ISO 178 Flexural Modulus, 2 mm/min 2370 MPa ISO 178 IMPACT ⁽¹⁾ ISO 178 ISO 178 Izod Impact, notched, 23°C 120 J/m ASTM D256 Izod Impact, notched 80*10*4 + 23°C 12 J/m ASTM D256 Izod Impact, notched 80*10*4 + 23°C 12 kJ/m² ISO 180/1A	Tensile Strain, yield, 50 mm/min	5.1	%	ISO 527
Flexural Stress, yield, 2 mm/min 106 MPa ISO 178 Flexural Modulus, 2 mm/min 2370 MPa ISO 178 IMPACT ⁽¹⁾ ISO 178 ISO 178 Izod Impact, notched, 23°C 120 J/m ASTM D256 Izod Impact, notched 80°10°4 +23°C 12 J/m ISO 180/1A Izod Impact, notched 80°10°4 +23°C 8 J/m2 ISO 180/1A	Tensile Strain, break, 50 mm/min	7.1	%	ISO 527
Flexural Modulus, 2 mm/min 2370 MPa ISO 178 IMPACT ⁽¹⁾ ISO 178 ISO 178 Izod Impact, notched, 23°C 120 J/m ASTM D256 Izod Impact, notched, -30°C 80 J/m ISO 180/1A Izod Impact, notched 80°10°4 +23°C 12 kJ/m² ISO 180/1A	Tensile Modulus, 1 mm/min	2390	MPa	ISO 527
IMPACT ⁽¹⁾ J/m ASTM D256 Izod Impact, notched, 23°C 120 J/m ASTM D256 Izod Impact, notched, 30°C 80 J/m ASTM D256 Izod Impact, notched 80*10*4 +23°C 12 kJ/m² ISO 180/1A Izod Impact, notched 80*10*4 -30°C 8 kJ/m² ISO 180/1A	Flexural Stress, yield, 2 mm/min	106	MPa	ISO 178
Izod Impact, notched, 23°C 120 J/m ASTM D256 Izod Impact, notched, -30°C 80 J/m ASTM D256 Izod Impact, notched 80°10°4 +23°C 12 kJ/m² ISO 180/1A Izod Impact, notched 80°10°4 -30°C 8 kJ/m² ISO 180/1A	Flexural Modulus, 2 mm/min	2370	MPa	ISO 178
Izod Impact, notched, -30°C 80 J/m ASTM D256 Izod Impact, notched 80*10*4 +23°C 12 kJ/m² ISO 180/1A Izod Impact, notched 80*10*4 -30°C 8 kJ/m² ISO 180/1A	IMPACT ⁽¹⁾			
Izod Impact, notched 80*10*4 +23°C 12 kJ/m² ISO 180/1A Izod Impact, notched 80*10*4 -30°C 8 kJ/m² ISO 180/1A	Izod Impact, notched, 23°C	120	J/m	ASTM D256
Izod Impact, notched 80*10*4 - 30°C 8 kJ/m² ISO 180/1A	Izod Impact, notched, -30°C	80	J/m	ASTM D256
	Izod Impact, notched 80*10*4 +23°C	12	kJ/m²	ISO 180/1A
THERMAL	Izod Impact, notched 80*10*4 -30°C	8	kJ/m²	ISO 180/1A
	THERMAL			
HDT, 1.82 MPa, 3.2mm, unannealed 169 °C ASTM D648	HDT, 1.82 MPa, 3.2mm, unannealed	169	°C	ASTM D648
Vicat Softening Temp, Rate B/50 191 °C ASTM D1525	Vicat Softening Temp, Rate B/50	191	°C	ASTM D1525

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CHEMISTRY THAT MATTERS



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/50	191	°C	ISO 306
CTE, -40°C to 40°C, flow	7.1E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.9E-05	1/°C	ASTM E831
PHYSICAL ⁽¹⁾			
Specific Gravity	1.06		ASTM D792
Melt Flow Rate, 320°C/5.0 kgf	25	g/10 min	ASTM D1238
Mold Shrinkage, flow, 3.2 mm ⁽²⁾	0.7 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm ⁽²⁾	0.8 - 0.9	%	SABIC method
Density	1.06	g/cm ³	ISO 1183
Water Absorption, (23°C/saturated)	0.06	%	ISO 62-1
ELECTRICAL ⁽¹⁾			
Dielectric Constant, 1.9 GHz	2.51		SABIC method
Dielectric Constant, 5 GHz	2.54		SABIC method
Dielectric Constant, 10 GHz	2.54		SABIC method
Dissipation Factor, 1.9 GHz	0.00114	-	SABIC method
Dissipation Factor, 5 GHz	0.00124	-	SABIC method
Dissipation Factor, 10 GHz	0.00175	-	SABIC method
INJECTION MOLDING ⁽³⁾			
Drying Temperature	110 – 120	°C	
Drying Time	3 - 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	300 – 325	°C	
Nozzle Temperature	300 – 325	°C	
Front - Zone 3 Temperature	290 – 325	°C	
Middle - Zone 2 Temperature	275 – 320	°C	
Rear - Zone 1 Temperature	265 – 315	°C	
Mold Temperature	80 - 110	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

DISCLAIMER

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